DOCUMENT RESUME

ED 384 317 HE 028 430

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TITLE	Benchmarking Outstanding Leadership in Higher Education: Innovation Today and Tomorrow. Draft.
PUB DATE	30 Oct 93
NOTE	29p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Change Strategies; Educational Change; *Educational Innovation; Fund Raising; Higher Education; Institutional Advancement; Institutional Mission; Leadership; *Leadership Qualities; Models; Organizational Change; Organizational Objectives; Success; Total Quality Management
IDENTIFIERS	*Benchmarking

ABSTRACT

A Total Quality Management (TQM)-based benchmarking study looked at the leadership of universities and colleges to identify, understand, and disseminate their best practices. The study found that outstanding leaders encouraged and promoted innovation. This spurred the development of novel programs and methods, even when to do so was extremely difficult, during cutbacks and budget crises. In particular, innovation was promoted through defined and agreed upon goals, brainstorming to determine the questions that would assist in attaining the goals, and the facts that these questions led to. Once goals, questions and facts had helped the institution assess where it was at present and conceptualize what were reasonable possibilities for the future, the institutions could consider some specific innovative programs. Successful innovative programs strive to be best, attract external funding, and attract students and faculty. The study showed that these should be led by a vigorous champion, generate good publicity for the institution, and be supported by key target groups. Some models for innovation were the 3M model that promotes innovation within that corporation's culture, the fast-dash program whose existence is very independent, the matrix model where four fundamentals (quality, creativity, ethics, and leadership) form the basis of every course; as well as standard models for change. Overall, the study found that institutions that employ TQM techniques to enhance creativity and innovation survive better and attract funds even during times of budgetary cutback. (JB)

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Benchmarking Outstanding Leadership in Higher Education: Innovation Today and Tomorrow

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October 30, 1993

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1. Introduction

From grade school on we have been instructed that innovation occurs randomly, when the light bulb of imagination in our head flashes and the creative idea strikes us. No notion, however, could be further from the truth. Despite what we have been taught, innovation definitely does not occur by happenstance or chance. Capable leadership can enhance innovation and dramatically heighten the quality and quantity of good ideas, helping people become far more inventive and creative than they think they can be.[1] What is typically missing, however, is the leadership that ignites and fuels the capability to innovate.

How leadership can promote more innovation is the prime contents of this paper, which is a benchmarking study of outstanding presidents and deans of colleges and universities. Benchmarking is a central technique of Total Quality Management. A benchmarking study seeks out the best practices, wherever they can be found, so that they can be applied more widely. Specifically, we studied the leadership of universities and colleges to identify, understand and disseminate their best practices. Although our benchmarking study has just started and our analyses preliminary, one fact is clear. The outstanding leaders encouraged and promoted innovation, spurring novel programs and methods, even when to do so was extremely difficult, during cutbacks and budget crises.

In launching our study, we recalled the conventional wisdom that presidents and deans can have only very limited impact on the central academic mission of their colleges or universities. Faculties are thought to be too powerful and too resistant to suggestions coming from the top. Indeed, any serious interest by the leader in making academic changes is often viewed by the faculty with resentment and distrust. As a president of the University of Chicago (Lawrence A. Kimpton) once put it, "When I put aside the beggar's cup I use in fund raising and begin to twirl my Phi Beta Kappa key, there is general alarm".

2. Hard Times in Academia and the Challenge to Innovate

Resistance to the twirling of the Phi Beta Kappa key remains as strong today as it was in Kimpton's time, but the twirling is much faster now. Austere budgets and pressures for downsizing are jolting and recasting colleges and universities. With some universities having their budgets slashed 10% to 30%, this, apparently, is the worst time to find outstanding practices for innovation and long term improvement since mere survival is imperiled. Many people we spoke to view the future grimly, and

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[1]Zangwill, Willard I., Lightning Strategies for Innovation, Lexington, a division of Macmillan, 1993

suggest that higher education has entered a new era of limits and belt tightening, proclaiming that the good times in higher education are over. Some scholars have even coined the sardonic term "new realities" for the gloomy and pessimistic future they foresee.

However, our studies are suggesting that a bleak, pessimistic vision of the future is not justified. Pessimism is often dangerously self-fulfilling. Pessimistic people generally restrict their actions and thoughts, and make decisions which ensure their dismal view becomes the reality. We believe that leadership should battle the poison of pessimism, using the antidote of innovation.

In fact, top university leaders often use difficulties as a launching pad for innovation. Richard Cyert, former president of Carnegie-Mellon, used to tell his administrators, "We cannot use an economic downturn as an excuse." Cyert assumed leadership at Carnegie-Mellon in the early 1970s when three consecutive deficits had been incurred. The trustees were very much concerned about the deficit. He told them that the deficit could be easily controlled (he did so in his first year) but that the real challenges lay elsewhere, in improving the institution.

Examples from the business world reinforce our point. When a market becomes mature or saturated, for instance, many firms cut back and retrench. But retrenchment is not always desirable, and innovation is typically the superior strategy. To illustrate, the market for radios has long been called saturated--- after all, everyone had one--- and many firms did quit that market. But the successful firms innovated and developed new sizes, features, and capabilities not to speak of the Walkman, stereo and digital. The market for home irons to press clothes was moribund until Sunbeam innovated an iron that shuts itself off. Certainly some markets do die or saturate, but far too many are declared declining or saturated when what they really need is a shot of innovation. As Fujio Mitari, president of Canon USA has declared, "Saturated markets don't matter because innovation can break through to new markets."

Scotch Brand cellophane tape, a seemingly mundane product, is a prime example. The tape was originally sold on a roll, requiring the annoying job of picking the tape off the roll. That frustrated and disconcerted the customers and market growth was stagnant. An enterprising business manager, John Borden, eager to boost his revenues, conceived of the dispenser with the serrated edge. Once the dispenser was developed, tape sales soared.

Simply stated, when faced with an uncertain and difficult future, most people retreat, but the leaders innovate. And this principle applies directly to higher education, since the history

of higher education is replete with examples of powerful innovations. Johns Hopkins revolutionized medical education. Cincinnati instituted cooperative education. Antioch capitalized on having campuses around the world. Elliot transformed Harvard from a largely theological school to a modern university. Also, many more schools have dramatically upgraded or changed themselves. Carnegie-Mellon catapulted itself to become a leader in computers and related technology. The University of Chicago, Graduate School of Business instituted the LEAD program to teach "action skills" needed by students to make full use of the intellectual components of the curriculum. Princeton moved to the forefront of the new developments in biological science, as did the University of California at Berkeley. The Kent School of Law at Illinois Institute of Technology introduced exciting new programs and transformed itself from second rate to highly regarded. The Kellogg Management School at Northwestern University moved rapidly from research mediocrity to research excellence. Fox Valley Technical College pioneered in Total Quality Management, thus sparking innovations at other Technical and Community Colleges that have put them ahead of most colleges and universities in implementation of Total Quality Management. Many other colleges and universities -- among them Rochester Institute of Technology, the University of Wisconsin/Madison, Oregon State University, and St. John Fisher College -- have followed this lead.

We are not declaring financial management to be unimportant and irrelevant. Quite the contrary, as faculty members at the University of Chicago, we are grateful that President Hanna Gray exercised a prudent fiscal policy and paid attention to maintenance of infrastructure, which permits our university to look at its educational challenges undistracted by financial panic. What we assert, however, is that top educational leaders not only surged ahead through innovation, but used innovation to ameliorate or eliminate budget crises.

3. Some Principles of Innovation

We believe that Total Quality Management, the underpinning of benchmarking, can help promote innovation, and for two grounds. First, it helps develop innovative products and services that can enhance customer satisfaction and open new markets. Second, it helps eliminate the waste, much of it nonobvious, that pervades most organizations, including colleges and universities.

To begin consider a basic TQM principle of innovation which can be summarized in the key words: **Goals, Questions, Facts.**

- Leaders -- administrative and faculty -- must define and agree upon **Goals.** Without some realistic, relevant, useful, and generally agreed upon goal, little happens.

- Brainstorming is used to determine the **Questions** that would have to be answered to determine if the goals are attained and if progress is being made towards their attainment.

- The questions lead naturally to **Facts**, the information that has to be collected to answer the questions. When the facts are quantitative and can be expressed as performance measures, they are often called **metrics.**

In the next sentence we flesh out this approach as it can be applied to higher education, with emphasis on the importance of goals.

4. **Goals: Vision and Mission**

No one college or university can cover all areas of learning, nor can it be outstanding in all the areas that it tries to cover. Richard Cyert has stressed the importance of stressing those areas for which the university has a **comparative advantage** (a simple but powerful concept from economics), taking into account its history and current resources and what its competitors are doing. We shall later describe how Cyert actually implemented this concept.

Since an institution can not do everything, it needs to focus on specific goals. For the institution as a whole the goals are often articulated in a Mission (or Vision) statement, a concept that is central to Total Quality Management. In a path breaking study, Chait, Holland and Taylor[2] analyzed what made trustees of universities successful or unsuccessful. The most important predictor they found was:

> **Having a clearly defined mission and ensuring that the board's actions and decisions support that mission.**

Some institutions have explicitly written mission (or vision) statements, while at others the mission is implicitly understood and part of the culture. Also formulating a mission sometimes degenerates into an exercise in reaffirmation of the obvious that is forgotten soon after it is completed.

The crucial aspect about a effective mission, however, is that the key individuals -- administrative and faculty -- agree on the kind of institution that they want--and then strive to achieve it. As Ted Marchese has stressed, what is important is not having a mission statement written on paper, but working toward a common, understood goal. Here, for example, adapted

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[2] Chait, Richard, Thomas P. Holland, Barbara E. Taylor, The Effective Board of Trustees, American Council on Education and Macmillan, 1991.

from Chait, Holland, and Taylor, is how a trustee of a small college described his college's mission.

> "This college is unique in this state. It is a top-quality, small, private liberal-arts college that provides individualized teaching and stresses excellence in all aspects of scholarship. The curriculum is varied but generally we combine pre-professional studies with a strong liberal arts foundation. We do have an athletics program, but is plays a supportive role, not dominating the campus as you see at some places."

This statement establishes the overall direction agreed upon by the trustees and president of this small college. For instance, this college is not likely to build a fancy football stadium in the near future, but it wants a top notch undergraduate liberal arts library.

In contrast, at the unsuccessful boards, Chait, Holland, and Taylor found that the trustees often could not state a clear mission. Any attempts at mission statements were often bland generalities, such as "provide a good education", or "help the students develop into adults".

One way to develop a vision is to form a commission to conceptualize where the institution should be in ten years. The commission would be charged with being bold and exciting and re-creating the university, without undue attention to traditional constraints. The commission might consist of representatives from the faculty, administration, trustees and alumni. Benchmarking would be useful: the commission should learn what leading thinkers and institutions see as future challenges and opportunities. Ideally, the commission should not only create a new vision, but stir vigorous and heated discussion, getting faculty and administrators actively thinking about the type of institution they want in the future.

A slightly different approach was launched by Gerhard Casper of Stanford[3]. To find a new vision and mission for the undergraduate program he decided to ask perhaps the most knowledgeable people, the alumni. He sought their opinion of the curriculum and on how their education did or did not prepare them for life. In a letter to all alumni he pointedly asked them, "What are the critical and necessary elements of an undergraduate education?" In response he received everything from one line postcards to 10 page handwritten letters, everyone of which is

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[3] Walsh, Eileen, "No Lack of Opinion as Casper Seeks Alumni Views on Curriculum Review," Stanford Observer, Sept.-Oct., 1993, p.1.

being examined to help Stanford recreate their undergraduate program.

These same concepts, although in finer detail, can be carried out at all major subunits of the institution. In particular, the schools, colleges, and departments can all have missions as well as specific plans and goals. Also, the institution's overall mission statement should be a guideline for the more specific goals and plans of the subunits. Later we shall provide examples of this approach.

Strive to Be Best

The goals of a community college, state college, liberal arts college, or a national research university will necessarily differ. The goals of a chemistry department will differ from those of a history department. Nevertheless, it seems important that they all be driven by the following principle:

Be best: the institution or subunit should strive to be the best or exceptional, **at least in its market segment or area.** Programs that attempt to be unique or special, create the vigor and enthusiasm that attracts students, faculty, and funding. Striving to be best provides no guarantee of becoming best, but it does provides a definite goal. On the other hand, simply trying to hold one's own virtually assures mediocrity.

The above quoted goal statement of the small liberal arts college illustrates the principle, as the college has the stated intention of being distinctive in a specific geographic area. Don Jacobs, Dean of the Kellogg School at Northwestern, articulated a similar goal in his vision, "Be the number one business school in the United States". When Jacobs formulated that vision in the 1970s, the Kellogg School was distinctly an also-ran. In fact, Jacobs recalls that when he announced his goal of being number one, he was openly laughed at and ridiculed, even by colleagues at Northwestern. But Jacobs refused to be discouraged by the pessimists, and, as discussed below, instituted a number of highly innovative programs. As a result, in the last three biennial **Business Week** surveys, Kellogg has been ranked first. Even granting the difficulties of making such comparisons of academic units, the lesson is clear.

According to our observations, many people seem to have difficulty formulating programs that strive to be best. Some points to consider are:

- **The program should not be too broad or diffuse, but sufficiently focussed to make a clear impact.** Many people suggest programs that would definitely improve an activity, say teaching or sociology, but the suggested programs are too broad

and general. To become unique and best typically requires a precise, narrow focus, and the spotlighting of a specific aspect for distinction. To illustrate, Joe White, Dean of Business, University of Michigan has enunciated the goal of making his school number one. He states that that goal has definitely changed the type of programs they are pursuing. Without that goal, he notes, they would never have undertaken a particularly risky and novel program. Under the program all first year MBA students, during the last seven weeks of the year, undertake a project in industry. Each student team is overseen by a cross-functional group of faculty members. The students, thus, are actively involved in a real project, but still under the careful tutelage of the faculty. The program has been an outstanding success, not only helping the students, but helping to recruit new students and in finding jobs for the students.

- **Benchmark.** Benchmarking is a basic pillar for becoming best. Benchmarking forces the people doing the benchmarking to see what programs other institutions are undertaking, programs which are often much more surprising and ingenious than had been realized. John White, Dean of Engineering at Georgia Tech, has instituted a thorough benchmarking study of other top institutions. Virtually always benchmarking suggests some powerful ideas, and in John's case lead him to make some important revisions in the funding. John Brighton of Penn State and Robert Mehrabian of Carnegie Mellon also strongly endorse benchmarking, both noting that benchmarking other institutions helped them identify many opportunities for improvement.

- **Check that the program really is targeted at being the best.** We have often seen programs initiated, some of them quite sizable, that are not really distinctive, but are only slightly different than other programs. Check in detail to learn what other institutions are doing and thereby validate that your program will be unique and special. Since internal opinion is almost always biased, we suggest asking honest and knowledgeable outsiders for their opinions.

- **Get moving. It is often better to start with a small step than to wait a long time to undertake a project or program.** Academics sometimes study and analyze for many months or ever years without making a decision. Long delays in getting a project underway, however, sap and destroy the innovative spirit. As Chris Galvin of Motorola emphasizes, be in "purposeful motion." To gain momentum, consider taking a small first step in a reasonable direction. Assuming the cost of change is not large, one can then revise the program as necessary, always targeting it on the goal of being best.

The role of leadership is clear. In Section 8, we quote both Arnold Weber, President of Northwestern, and Hanna Gray, former President of Chicago, on the need to bring out faculty

leaders to support new academic initiatives. The academic leader must encourage, aid, and guide the formulation and implementation of programs that are clearly aimed at being best.

Money and Funding

Of course, becoming special and distinctive nearly always requires money. But, institutions that are best or striving to be best in their chosen areas generally raise funds and garner contributions more easily. Many people, it seems, like to contribute to and be associated with something that is best. Ted Marchese notes how institutions like Northeast Missouri State, James Madison, or Miami Dade Community College, have elevated themselves and then were able to boost their funding. Northeast Missouri, Marchese reports, has a more select student body than the University of Missouri and became designated as the state's liberal arts college, providing it additional funds. Likewise the Weatherhead School of Business at Case-Western Reserve, upgraded itself and thereby garnered additional contributions, notes Richard Chait. If done adeptly, pursuit of being the best tends to more than pay for itself, even during times of budget cutbacks and retrenchment.

To illustrate, in our interviews with academic leaders, we had expected to hear that fund-raising was an all-consuming challenge. What we heard was that they felt successful fund-raising to be a byproduct of educational innovations. For example, Don Jacobs, Dean of the Kellogg Management School at Northwestern, has a very small staff devoted to development, but fund-raising is going very well.

Comparative Advantage

How, specifically, should an institution strive to be best? One clue has already been suggested: the principle of comparative advantage. Comparative advantage is relevant not only at the level of the institution itself, but within each college, school, and department. The following questions can help in the process of finding where the comparative advantages may lie.

- Determine the strengths of the institution or unit.
- Evaluate the competition, their strengths and weaknesses, and what they are likely to do.
- Assess future trends in students, research, funding, and other relevant areas. Apparently obvious sources of information such as demographic data on age groups in the population can be useful, but they are sometimes overlooked. Analysis of demographic trends was key to changes in the geographical emphasis in student recruitment at Carnegie-Mellon during the presidency of Richard Cyert.

- Speak to and gather information from key constituencies such as students, faculty, alumni, parents, business and government leaders, other educators, funding agencies, etc.

On the basis of the information obtained, the institution and its subunits can often identify their comparative advantages. When they see them, they can capitalize on them and thus move towards the objective of being best.

When Richard Cyert was president of Carnegie-Mellon University, he applied the principle of comparative advantage and was able to infuse this thinking so that it became second nature throughout the University. What is interesting is that he applied the principle not only to the entire university but to subunits right down to the departmental level.

English, for instance, was a weak department when Cyert became president in 1972. It was a service department in a university with primary emphasis on engineering and science. Analysis showed that it would be virtually impossible to become one of the top departments in literature and literary criticism. Other schools had extensive libraries and other formidable advantages. However, it was felt that Carnegie Mellon University could become one of the very best in rhetoric, defined as written communication. Also many of the engineering department wanted the English department to help their students write better. Rhetoric, thus, was determined as the area in which they could have a comparative advantage. Carnegie-Mellon then took the steps that placed them among the best two or three departments of rhetoric. Then they undertook to leverage their strength in rhetoric to improve their capabilities in literature.

Another example at Carnegie-Mellon was the mathematics department. Although some in the department aspired to emulate Harvard in pure mathematics, this goal was not easily reconcilable with the broader goals of the university in engineering and applied science. Led by George Fox, who said that he was "not taking the job to balance the budget", they were able to develop strength in applied mathematics, where they could and did rise to distinction.

Cyert required every department to do an analysis of comparative advantage and to develop a strategic plan. Indeed, Cyert declared that he would not give a department an increase in funding unless they had a strategic plan that set forth their comparative advantage and how the department planned to achieve a top position.

5. Creating Agreement and Alignment

Despite the value of identifying comparative advantage and capitalizing on it, in practice there is the almost universal difficulty of obtaining agreement of the key constituencies. If a decision is made to emphasize one faculty group in a department, that generally means that other groups in the department will receive less emphasis. For instance, the faculty who teach literature might not be delighted to learn that rhetoric will get the emphasis and money, and might attempt to block the effort to emphasize rhetoric. The same kind of problem can arise at higher levels. Trouble is clearly ahead at a university where one powerful group wants to stress adult education, another wants engineering, and a third wants a basketball championship.

As Bill Bowen, former president of Princeton expressed it, unless the major constituencies are of like mind about the general directions, "Rancor will follow all of your days". In Bowen's experience, the key to achieve alignment was a "Priorities Committee," the committee setting the funding priorities for the university. The committee was established in the late 1960s when Bowen was provost, and was chaired by the provost. The committee included the financial Vice President (Richard Spies for the first 15 years), had elected faculty members, and was attended by the president when he could. There were frequent meetings. Deans made presentations, and there was strong staff support, headed by the Controller. One of the prime reasons to the committee's success, Bowen believes, was the fact that the university community held the faculty members elected to the committed in high regard. This Priorities Committee has served well ever since and still functions. For example, it helped secure alignment on making a major, highly successful, thrust in molecular biology in the early 1980s.

The framework of Goals, Questions, and Facts deals with the problems of alignment. In addition to stressing the need for the goal (vision, mission), this framework calls attention to the importance of avoiding discord in obtaining general agreement. That concept is explicitly articulated in the principle of minimizing contention:

> Make efforts to avoid or reduce contention and excessive conflict among the key constituencies. Some disagreement is unavoidable and welcome, but it should not make the organization dysfunctional. The organization must continue functioning productively without hostility or resentment. And in achieving this, Total Quality Management can assist.

The traditional method for reducing dissension and gaining support for actions is extensive conversation and discussion. Most presidents, provosts and deans continually interact and

speak with many members of the faculty. Richard Cyert, however, went a step farther. On a regular basis he met with the faculty of each different department for an extensive discussion. He used these sessions both to get across what his views were as well as to learn about the faculty's issues. He especially wanted to get the faculty thinking about how to make the department distinguished and usually asked questions such as, "Why would a student come to this department to study? What is special about this department and/or what is being done to make it special?" He used these sessions as part of his effort to gain consensus and agreement on goals and directions. Moreover, what he heard in these sessions often influenced his thinking about the funding and directions for the department.

Whereas conversations are essential to getting agreement on directions, the usual techniques for deciding on goals, as Mike Dolence of UCLA has stressed, foster divergence. Suppose people are asked what they want in terms of an overall direction. Each person is likely to state something different, and, as is not uncommon with both faculty and administrators, each wants his or her view to prevail. In the effort to reconcile the differences, the goals of the organization often become compromised and diluted. And the resulting goal, being diluted, typically lacks precise focus. Notes Richard Spies, vice president of Princeton, "It is remarkable how much progress can be made when administration and faculty cooperate. And how deadly and debilitating it can be when the administration and faculty conflict."

Total Quality Management adds a number of techniques for effective team functioning that can help avoid conflict and gain agreement. These techniques fall into two categories:

1. **Promotion of Team Building and Cooperation.** TQM approaches, developed largely by behavioral scientists, apply to meetings and team facilitation. They can transform contentious academic committees into teams that focus on organizational goals rather than narrow individual interests.

2. **Promotion of Better Decisions by Fostering Creativity and Superior Analysis.** One example is the decision model used in the 1970s at Stanford by Provost William Miller[4] in order to allocate budgets. Miller's model includes an explicit statement of four criteria he used for evaluating proposals:

- Academic importance

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[4] Chaffee, Ellen Earle, "The Role of Rationality in University Budgeting," **Research in Higher Education**, Vol.19, No.4, 1983, pp.387-406.

- Student interest
- Possibility for excellence in the program
- Funding potential

Each year the various deans submitted to Miller a variety of proposals that he evaluated using the above four criteria. Moreover, each proposal was supposed to address how well it satisfied the above criteria and, if possible, to provide any available data or documentation that might be helpful. Finally, Miller selected the proposals that he felt best met the criteria, and this set of proposals formed the budget.

The Stanford approach promotes funding of those proposals that assist the organization attain its goals. Also, the use of a formal approach reduces the importance of political clout or of emotional rhetoric. Of course, the approach should be administered flexibly with some exceptions permitted, since some proposals that rate poorly on the goal criteria will still be meritorious and deserve funding. Nevertheless, the approach did help focus the organization on what was important and on achieving its goals.

The Stanford example shows how Total Quality Management methods can help the decision process and reduce conflict. The overall Total Quality Management approach includes many techniques that can also assist. Indeed, these techniques provide a formal apparatus for determining facts, generating creative ideas, and building general agreement. For an overview of this approach, see **A Report of The Total Quality Leadership Steering Committee and Working Councils**[5].

Support the Faculty

Although the above suggestions certainly help, none of them will bring harmony if the faculty is basically resentful. It is surprising how minor issues with the faculty, like secretaries, classrooms, travel money, and small projects can cause trouble if not handled well. Lew Collens, when he was dean of the school of law at Illinois Institute of Technology (ITT), was delighted to assist faculty with their projects and requests. He wanted to encourage the faculty to explore new things and move ahead, and

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[5] **A Report of The Total Quality Leadership Steering Committee and Working Councils**, Procter & Gamble Total Quality Forum, November, 1992, especially Core Body of Knowledge Working Council, "Perspectives on Total Quality". Copies can be ordered from The John K. Howe Company, Inc., 400 Pike Street, 9th Floor, Cincinnati OH 45202-4216.

made it easy for the faculty to do so. The Graduate School of Business, University of Chicago, in an effort to simplify approvals, gave each faculty member a special individual budget to be used, at the faculty member's discretion for books, travel, professional dues, secretarial support, or computers. One early effect was a sharp reduction in secretarial staff and corresponding increasing in individual computing equipment. John White, Dean of Business at Michigan, as another example, consistently tries to support faculty requests. As he puts it, the faculty must be "respected."

In the area of faculty respect, we uncovered one area in which many administrators are sometimes lax, the returning of faculty phone calls. It seems valuable for the administrators to return faculty phone calls fast, in no more than 24 hours. If the administrator is away, an assistant can tell the faculty member when the call will be returned.

Educational Goals, Not Financial Goals

There is another aspect of the Goals component of "Goals, Questions, Facts": vision/mission statements place greater emphasis on educational and leadership terms than on financial terms. According to Chaffee[6], and summarized in Chait, Holland and Taylor,

> Schools are not well served over the long term by strategies designed principally to cut costs, respond to the marketplace, and increase flow of services. However useful the efforts were to reduce inefficiencies, trim staff, add programs, teach off-campus, and open new markets, these tactics alone were insufficient. ... Successful turnarounds occurred where the college's leadership clarified the institution's purpose and priorities and emphasized institutional credibility, integrity, and dignity.

Strategies driven primarily by financial considerations tend to be shortsighted and inadequate, a sign of mediocre leadership. These strategies seek the quick fix. On the other hand, the successful strategies stress sound educational principles and provide a vision for progress, advancement, and innovation in good times and bad.

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[6] Chaffee, E. "Successful Strategic Management in Small Private Colleges", Journal of Higher Education, Vol.55, #2, pp.212-241, 1984.

6. Operating Plans

Developing goals provides the direction in which to proceed, but gives no warning of the perils of the journey ahead. Budgets have to be allocated, programs developed, and funds raised. Fortunately, TQM techniques can assist with many of these activities. Now we are concerned with the "Questions" and "Facts" aspects of "Goals, Questions, and Facts". Recall, the questions are designed to discern if the goal will be obtained, while the facts answer the questions. The obtaining of facts (data) is fundamental to the TQM approach. It is often termed "management by fact" as opposed to management by hunch, experience, or intuition.

Unfortunately, in academia as elsewhere, many decisions are based not upon fact, but on the intensity and persuasiveness of the rhetoric (who yells loudest or is the most insistent). Provinciality is rampant, as departments evaluate themselves as having much higher quality than they really have. As has often been stated, in any discipline, twenty schools or departments are ranked in the top five. Given these misconceptions and distortions, is possible to determine fact? Arnold Weber, President of Northwestern University employed a program review procedure to minimize the distortions and get the facts. This program was initially deployed over a period of six years, and a second cycle has now begun.

Program review is not a new concept, but the Northwestern approach has some appealing features. As program review is usually practiced, a group of reviewers analyze a department (or other university unit) and report their findings. Quite different is the Northwestern approach, as it reviews a department using not one, but three separate groups of reviewers: First, the department reviews itself. Second, a team of three faculty members from other departments at Northwestern review the department. And finally, a group from outside the university reviews the department. By conducting three separate examinations, it is possible to obtain a "triangulation" that provides a much more balanced view of the department. To facilitate their investigation, the reviewers are provided considerable quantitative data, such as, quality of student, external funding, graduation rates, where graduates get jobs, faculty research grants and publications, etc.

The outsider reviewers, usually two of them, are selected to be as distinguished and knowledgeable as possible, Nobel prize winners, National Academy members, and so on. Arnold Weber, especially stressed the importance of having excellent outside reviewers. He cannot tell the physics department what it should do, he noted. The physicists would retort, "You are not a physicist. What do you know?" But he can justify his actions by

telling the physicists, "This Nobel prize winner from Columbia said you should do X".

The Northwestern review is targeted on upgrading and improving quality. Administrative as well as academic units are reviewed. Over the years the review process has exposed units that were weak and that required reorganization or even closing, but those instances were few. In nearly all instances the reviews have helped improve the unit reviewed, and over time, faculty and staff have learned that the review process helps them. The process has been completed for one six-year cycle, and is now well into a second cycle.

The fact that the Northwestern reviews help to improve quality is very important and in sharp contrast with many other program reviews. At many universities, performance reviews (whether explicitly stated or not) are really to ferret out the "weak sisters" for cutting, or to provide ammunition to justify budget reductions. But when the review is really to help wield the budget hatchet, people, fearful of the consequences, will not cooperate. Reviews designed to cut nearly always fail, and, since they spawn resentment and distrust, they should be avoided.

At Northwestern, to further gain faculty support and commitment, the entire review effort is under the direction of a campus-wide faculty committee. The committee coordinates with the central administration, of course, but the faculty control strengthens the real objective, enhancing university quality.

Finally, the Northwestern reviews do not end up becoming just another report, as often happens with the usual review. Rather they are carefully studied by the president and provost, form the basis of planning for the future of the unit reviewed, and play a pivotal role in the upgrading of the university. Indeed, the fact that the reviews play such an important role and are used in a positive manner to upgrade and improve, is essential to maintaining the faculty's support of the process.

The Northwestern review process is quite sophisticated and comprehensive. Carnegie-Mellon University, according to its current president, Robert Mehrabian, uses a slightly simpler process. Instead of three separate reviews, CMU employs only one. The review committee consists of about half experts from outside the university, and about half of faculty from other departments or schools at CMU. The committee takes three days to conduct the review, and the reviews are undertaken about every 2 1/2 years. The reviews play a very important role at CMU because the president scrutinizes them and uses them to help allocate budgets.

Certainly, the program review process, whether the Northwestern, CMU, or other model, is not applicable to all

institutions. Nevertheless, by using outside, independent reviewers, it provides a concrete, disinterested, and intriguing application of "Questions and Facts".

Quantitative Facts and Metrics

Sometimes the facts are quantitative and then can be treated as metrics. For an example consider the mission statement of Bruce Gewertz, Chief of Surgery of the University of Chicago Hospitals:

> "Deliver the highest quality patient care while fostering exceptional academic achievement by trainees and faculty."

To evaluate progress towards this goal the following metrics are being employed:

- Clinical measures: the number of regionally and nationally multi-disciplinary programs, improvements in patient outcomes by complex measures, and increased clinical activity.

- Academic measures: the number of externally supported research grants, the number of peer reviewed publications, the quality of residency applications, and the number of trainees choosing full time academic careers.

Metrics like these help Gewertz evaluate if his department is making progress toward its mission.

7. **Specific Programs**

Once Goals, Questions, and Facts have helped the institution assess where it is now and what are reasonable possibilities for the future, the institution can consider some specific innovative programs. Each particular program can undergo the same analysis, so that each program has a clear direction that is consistent with the institution's overall direction, and each program has some questions and some facts to evaluate its progress towards the goal.

As for specific programs, sometimes the program can be exceptionally bold such as Stanford University's decision to become one of the world's preeminent universities, and, in the process, to hire 150 star professors, develop an industrial park, and raise hundreds of millions of dollars. Most program efforts, however, will be on a much less grandiose scale, and for that scale of effort, considerable insight can be obtained from the experiences of Lew Collens, when he was Dean of Kent School of Law at the Illinois Institute of Technology (IIT).

When he became dean, Lew recalls, "We were very mediocre, and really could not come up with a reason why students should come here". Lew then developed a vision to be preeminent in some areas (the "Be Best" principle), with the excellence of those areas helping to gain attention and prestige for Kent as a whole. To obtain accurate data (management by fact) Lew spoke to numerous law firms, students, faculty, alumni, deans and faculty from other law schools. Out of this careful assessment of what should be done, Lew and his colleagues conceived and launched three programs.

1. Through his discussions, Lew learned that almost all law firms had the same complaint: that law school graduates cannot write or research the law competently. To remedy that, Kent required that students take three full years of research and writing, which is more than any other law school.

2. Lew knew that the computer and information processing were going to dramatically change the practice of law. Also, Kent faculty already had one of the leading experts in that field. So, Collens decided to build on that and become a world's center in that field.

3. Kent did something unique among law schools. It started a law firm within the school itself. Faculty would handle actual law cases and students would assist, thereby providing the students with real experience with real cases and under expert tutelage.

To get all three of these programs fully underway took years. Nevertheless, in this manner Kent launched three programs, each of which was unique and designed to be preeminent in its area. As these program were launched and grew, they attracted attention for Kent and helped bring in not only better students and faculty, but more funds. The programs were thus a fulcrum, helping to lever up the rest of the school. Moreover, since most of the faculty had interest in at least one of these three programs, nearly all of the faculty perceived a personal benefit from the Lew's effort, so supported the programs.

Kellogg School of Management

Many of the same patterns can be seen in the improvement of Northwestern's Kellogg Graduate School of Management, under Dean Don Jacobs. When Don proclaimed his goal to make Kellogg the number one business school, nearly everyone else laughed, including many at Northwestern. As we suggested earlier, now Don is doing the chuckling as Kellogg has moved into the ranks of the top business schools, at least in certain closely watched rankings.

Don more or less single-handedly inculcated the goal of high-quality scholarly research, as W. Allen Wallis and James H. Lorie had done nearly two decades earlier in the Graduate School of Business, University of Chicago. Jacobs, like Wallis and Lorie, was able to do this by exercising close personal control over the early faculty appointments of his administration. Funds were not available to hire top senior researchers, so Kellogg decided to hire promising youngsters and nurture them. Moreover, Jacobs personally oversaw the hiring and promotion to ensure standards were high.

The other essential component of Don's strategy was to emphasize management, and thus (in Don's view) distinguish itself from all other leading business schools who, Don felt, emphasized Ph.D research and specialized fields of business.

In order to get the faculty interested in the management approach, he stressed relatively short courses -- a week or a month -- devoted to topics of management education of special interest to senior executives (those with much more substantial experience than the constituency of the usual Executive MBA Programs). In that way the faculty would teach and interact with senior executives, learn about the problems they faced, and become more interested in management issues.

The faculty had two financial incentives to intensify their interest: the extra compensation for teaching in these special short courses, and the plow back of revenues into the disciplines that contributed these teachers. The incentive to learn more about managers and management was clear.

The emphasis on management permeated the MBA student level also, as Kellogg stressed teamwork in the classroom, the empowerment of students, and education in managerial skills instead of technical skills.

To attain his goal, Don also needed to upgrade the student level, so decided a novel tack. He made sure that all applicants were personally interviewed, often by Kellogg alumni, even though no other business school did that. At Kellogg, however, the interview was to serve two purposes. It not only evaluated the potential of the applicant, it also was a marketing tool, to sell the applicant on attending Kellogg. Kellogg wanted to be sure the applicant got an exciting description of the school, not just from a brochure but from a person personally knowledgeable about the place. This extra sales effort definitely increased their yield of applicants that accepted.

8. Key Principles

Certain concepts emerge from our examples as typical best practices. We now try to formulate these concepts in a suggested

checklist. Rarely can a program satisfy all the points on the checklist, but successful programs seem to embody many of the points. The reader will notice that the concepts were followed by many of the programs discussed above.

- **Does the program strive to be distinctive or best?** Following the Be Best principle, the program should aspire to making the school pre-eminent, the best, or unique in certain important areas. As mentioned, pursuit of being best enhances creativity and innovation, as well as enthusiasm.

- **Will the program likely attract external funding and money?** One of the virtues of innovative programs, particularly in difficult financial times, is that they can attract money, because, as mentioned, more funds will likely flow to innovative programs than to run-of-the-mill ones.

- **Will the program likely attract faculty or students?** If the program is really unique and special, it will likely attract faculty and students.

- **What is in it for the faculty?** The incentives to enhance faculty interest in supporting the program should be clear. The programs by both Collens and Jacobs had definite incentives to interest faculty, and thereby to reduce dissension and gain support. Typical incentives include more money, more facilities or equipment, a more exciting and stimulating environment, and so on.

- **Is the program exciting?** The program should create excitement and fun, and be highly stimulating for the participants. The excitement and fun aspects are often overlooked, yet few programs become real successes without them.

- **Will a vigorous champion spearhead the program?** The program should have a champion who will not accept failure. The champion will shepherd the program through difficult times, and maintain the standards. Indeed, the maintenance of standards is perhaps the most difficult challenge. Any compromise of standards makes it harder to become known as unique and pre-eminent, and to reap the benefits of being so. Both Weber at Northwestern and Hanna Gray at the University of Chicago spoke of the difficulty of obtaining faculty champions for new programs. Hanna spoke humorously of faculty members who wanted to be "entrepreneurs in a welfare state", that is, to suggest bold new ideas and have the administrators raise funds and bring the ideas to realization.

- **Will the program generate good publicity for the institution?** What is the value in having an exemplary program, if no one hears about it? The suggestion here, however, is that publicity might be considered up-front, in the initial conceptualization of the program, not merely as an afterthought.

- **Will the key target groups perceive the program as special, unique and worthy of their support or involvement?** Very often the people who develop a program believe it is special and unique. But that does not mean that others will see the program that way. Especially for individuals at another institution or different location, they very often will not perceive the program as special or distinctive. In developing a program, it might be helpful to obtain input from the relevant target groups (prospective students, funding sources, faculty at other institutions) to check if they share the belief that the program will be special, unique and important.

9. Models of Innovation

Although some examples of innovative programs have been presented, it is useful to classify such programs into broad species, thus gaining insight into broad strategies by which innovation can be pursued.

3M Model

The 3M model captures the mode of operation of a famous and highly successful firm, 3M. At 3M innovation is the mission. Since the 1920s, employees have been encouraged to spend up to 15 percent of their time in developing new ideas on their own initiative. At any instant, a substantial fraction of company's sales comes from products that did not exist five years earlier. Division managers have goals for the numbers and sales of new product innovations. Innovative employees are rewarded and promoted. The organizational culture has been shaped to promote innovation, with the objective of speeding the development of successful innovative products. According to the 3M philosophy, if the right incentives and culture are provided, employees will burst forth with innovation after innovation, and propel the company to success.

The 3M model of leadership is the opposite of the standard model of leadership. In the standard model, the leader sets goals and the employees are to follow. In the 3M model, managers follow, because the employees are the real leaders, the ones who pioneer and develop the innovations, and the managers support and facilitate the employees. The 3M model is especially well suited for academic institutions and many of top educational follow it closely.

In particular, usually the faculty are in a better position to innovate than are the administrators. The administrator's role is to develop the environment and incentives that stimulate the faculty. Thus energized and supported, the faculty themselves will create the new programs, develop the fascinating courses, and conduct the excellent research. It is important

that the administrators make innovation easy; for example, they must eliminate cumbersome and lengthy approval processes that stultify innovation and poison its essence. At the same time, as was suggested by Hanna Gray's remark about entrepreneurs in the welfare state, faculty should follow through on their good ideas so that the ideas can be translated into action.

Fast-Dash

The fast-dash program is one whose existence is largely independent of the faculty and the usual academic curriculum, allowing it to be implemented fast. An example is the LEAD program at the Graduate School of Business, University of Chicago, whose novelty and innovativeness helped it to gain national attention. LEAD is a non-credit course designed to teach action and leadership skills to first-year MBA students, and functions largely independently of the regular curriculum. Although the program is facilitated by faculty and administrators, the central planning and execution is done by a team of second-year MBA students.

Since LEAD was essentially independent of the regular curriculum, it did not require the usual lengthy process of faculty approval. In particular, it was developed in only three months in the Spring of 1989 and was implemented full scale (not in a test version) in the Fall of that year.

When the need is for speed, the fast-dash model, since it interfaces little with the usual academic activities, may be a viable approach.

Matrix Model

As president of Illinois Institute of Technology, Lew Collens is using a matrix model to implement an innovation based on the proposition that there four fundamentals that all students should learn, quite apart from the intellectual content of the curriculum:

- Quality (Essentially, concepts of Total Quality Management)
- Creativity and Innovation
- Ethics
- Leadership

The acronym for these fundamentals is QCEL. The idea behind QCEL is that its components should help to prepare students to cope with the uncertainties of life and work in the future, quite apart from their formal academic training.

Under the matrix approach, these four fundamentals are to be taught, at least to some degree, in every course. For example, in a thermodynamics course, the students will learn, in addition to the usual technical concepts, what thermodynamics has to do with quality, creativity, ethics, and leadership. A literature course will devote at least some of the time to these issues, and the same with all other courses. Presumably, by the time the student graduates, he or she will have approached these four issues from many perspectives and understand them deeply.

In brief, under the matrix approach, a few crucial themes are taught throughout an entire curriculum. Illinois Institute of Technology uses this approach as a selling point to prospective students, emphasizing how students are thoroughly exposed to concepts that should greatly foster their future well being and success.

Standard Models

Institutions continually upgrade themselves through the means of innovative programs. For universities of national stature, the usual goal is to improve the rankings of the departments in national polls. The standard techniques for this involve hiring distinguished faculty, increasing visibility of the research, and improving fund raising.

Other institutions might want to increase undergraduate enrollment, which may lead to improvement of the quality of student life not just inside the classroom but outside. The physical plant may be crucial, since prospective students and their parents enjoy seeing an attractive, tree lined campus.

Overall, and irrespective of the particular goals, however, an innovative program to reach the goals is needed.

10. Creating A Sense of Urgency for Change

Getting people to change is difficult. When faculty are involved, as they are with most academic programs, it is doubly difficult. We above mentioned the value of creating incentives for the faculty, as then the faculty would see some personal advantage in the new program. But incentives, while helpful and necessary, are only half of the solution, and when used alone often fail. What seems required also, is to instill a sense of urgency.

At the Wharton School at the University of Pennsylvania, Jerry Wind helped convince the faculty to adopt a major restructuring of the curriculum by convincing them that the school could not survive as it was presently constituted. He underscored that now, while they were strong, was the right time

to change. That approach helped ignite the fires under people and convince them to support the new curriculum.

Marilyn McCoy, vice president of Northwestern concurs with this approach and suggests presenting specific examples of how the present system did not work properly. The specific examples seem to bring home and make personal the fact that change is needed.

Although change is difficult, it is necessary to stress that continuing in the present way will soon cause even greater difficulties, so that change is really the easier path.

11. **Budget Reductions**

We return to the problem of handling a reduction in funding. Given care in defining goals -- vision and mission -- budget reduction is less likely to be urgent and, if unavoidable, it can be done more effectively.

First, an institution that is innovative and moving ahead will generally suffer less severe budget problems because, as we have mentioned, individuals and funding agencies like to invest where something special is happening. Second, having a clear mission and direction will help focus and promote innovative ideas that can help alleviate the budget problems. Third, should budget cutting be necessary, the clear mission and direction should make the budget reduction easier.

Only when there is a severe reduction in funds, should central academic programs be sliced. George Keller, University of Pennsylvania, notes that there are many ways to achieve budget reductions that have little impact on the academic functioning. Indeed, one important message of Total Quality Message is that there enormous amount of waste exists in nearly all systems and processes. And that waste can almost always be cut without harming the core functions of the institution, the teaching and research. Here is a partial list of targets of opportunity for cutting waste:

- **Eliminate courses with small enrollments.**

- **Make administration more efficient.** Most organizations abound in wasteful administrative practices, obvious and non-obvious, and Total Quality Management methodology is invaluable in rooting out these wastes. It is not uncommon, Keller notes, for the public relations staff to be bloated, or for the business office to be cumbersome, bureaucratic, and bulky. We can add that many universities and colleges, including some represented in our examples in this paper, have begun mobilizing Total Quality Management in order to

reduce administrative waste. Marilyn McCoy, Vice President at Northwestern, provides one excellent example.

- **Cut sports programs, which tend to be expensive and over time grow to be too large.**

- **Reduce energy consumption.** Certain energy providers will conduct a free analysis of potential energy savings. (Of course, the firms expect that their equipment for energy regulation will be later purchased.)

- **Insist that faculty aggressively seek research grants.**

- **Reconsider policy on use of adjunct faculty, which can either decrease or increase use of adjuncts.**

- **Improve fund raising.**

Whatever the amount of budget reduction, Richard Cyert, highlights the importance of building and doing innovative programs even during times of cutback. He suggests that if necessary, one should cut too much in order to have some funds for innovation.

Involve the faculty

Keller also highlights another powerful means of budget reduction, that of involving the faculty, and exposing them to the reality of the budget numbers. The faculty, being bright and creative, often suggest ingenious ways to cut the budget or to raise funds. Bill Nowlin of Rochester Institute of Technology notes that in one department the faculty was made aware that 25 percent of their revenue came from service courses taught for other departments. Armed with that information, the faculty started to visit other departments, learn their needs, and develop even more service courses.

Keller also mentions that this approach of mobilizing the faculty to ease budget problems, while often very successful, may require that the faculty receive some education in financial matters beforehand. For example, it is important for the faculty to understand that the endowment is not something that should be employed to solve routine deficits. Also, sometimes the faculty might want to reduce certain really vital administrative services, such as admissions, student housing, or student aid, before they cut activities related to their own teaching or research.

Overall, the faculty can be enormously helping in suggesting how to alleviate budget problems. Throughout our observations, however, we found very few instances where administrators took

advantage of this powerful resource. Almost always the administrators did the budget cutting themselves.

Total Quality Management for Teaching and Research

There is a potential opportunity for universities to apply tools of Total Quality Management to make their central academic functions -- teaching and research -- more efficient. Four years ago, a challenge was issued to academia that is beginning to evoke a response. At the Xerox Quality Forum of 1989, attending deans and professors from business schools were urged to introduce Total Quality Management courses into MBA programs. There was agreement on the desirability of the goal, but the academics saw formidable obstacles: MBA curricula were already packed full, they said. Several other new areas were contending for inclusion: international business, business ethics, environment, diversity, regulation, etc. How could they possibly make room for TQM? What would they have to give up?

Bob Galvin, then CEO of Motorola, replied as follows:

> What do you give up? I wonder if it's fair to ask of you, as we in industry have been obliged to ask of ourselves, "How efficient are you? Why can't you teach 50 percent more in a year than you're now teaching?"
>
> Not one percent. It's this big step-function phenomenon. Why can't you in two or three years change your curricula? Decide that you're going to add all these things in two or three years, and do it. That is what we in industry are having to do to serve our customers.
>
> How do you do it? I don't know. That's not my business. But I do know that for our business, we have to accept the challenge. You have to have the mindset that it can be accomplished. Once you start looking for the solution, you'll come close. Maybe you'll only improve it 40 percent instead of 50, but you can put out a lot more information!

Next, to lend some plausibility to Galvin's challenge, we quote Alan Robinson on the Training Within Industry (TWI) Program of World War II:

> An early success of the TWI service was its role in eliminating the nation's critical shortage of skilled lens grinders. In late 1940, a government search for 350 such specialists for use in bombsights, periscopes, and other optical equipment, had turned up no qualified people. Unfortunately, under the existing system it took five years to train a master lens grinder. TWI was asked to study the problem. It was found that a master lens grinder was

> expected to be able to perform twenty jobs, of which only a few were highly skilled. The unskilled jobs could be assigned to less skilled workers. When these tasks were reassigned according to TWI recommendations, the problem eased tremendously. What is more, TWI specialists, using the methods from the JIT [Job Instruction Training] course, redesigned the program for new lens grinders and managed to **reduce the training time from five years down to two months.**[Emphasis added.][7]

In 1993, four years after Galvin's challenge, there is serious discussion of achieving academic objectives in shorter time: one year MBA programs instead of two and four-year engineering programs instead of five. Moreover, there has been an upsurge in efforts to apply tools of Total Quality Management to the improvement of teaching and there is interest in using the same tools for the improvement of research.[8]

Sizable Reductions

If your university has undergone a severe budget cut, say 10% to 30%, you might be reading this with a bit a cynicism. No amount of innovation can immediately compensate for such a massive slashing of funds. We do not wish to minimize the difficulties posed by downsizing, nor to deny that a sufficiently large downsizing program can virtually decimate a university. We are also mindful that many, though not all of our illustrations, are drawn from private universities. Our discussion with Tom Wallace, president of the University of Illinois at Normal, suggested that a quality improvement initiative by a public institution faces more serious obstacles than a similar initiative at a private institution. John Heilbron of the University of California at Berkeley has suggested that we would find something like nuclear destruction if we look at public higher education in California.

What we have observed, however, is that innovation can not only ease the pain and difficulty of enormous cuts but prevent some of it. Suppose, for instance, the state legislature cuts

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[7]Alan Robinson, "Modern Japanese Management Style", in Alan Robinson, editor, **Continuous Improvement in Operations: A Systematic Approach to Waste Reduction**, Productivity Press, Cambridge, Mass., 1991, 14-15.

[8]George R. Bateman and Harry V. Roberts, "TQM For Professors and Students", Graduate School of Business, University of Chicago, February 1993; Harry V. Roberts, "Grass-Roots Total Quality Management for Education", Presentation at the National Quality & Education Conference, Denver, Colorado, November 9, 1993.

the state's contribution massively. Even in that case, as mentioned, institutions striving to be best generally have an easier time raising funds, so can more easily cushion the cuts. Secondly, innovation often suggests novel means to raise funds. Curt Tompkins, president of Michigan Technological University notes that he got deans and departments heads involved in fund raising. Soon thereafter someone suggested that trustees get involved with individual departments, to assist in the fund raising. Each trustee chose the department he or she preferred, but never before had trustees coordinated with individual department heads and faculty about how to jointly raise money.

In our investigations we encountered many people whose institutions had suffered severe budget cuts, and these people were understandably downcast and pessimistic. In each case, moreover, these people sincerely believed that they had tried to be innovative in an effort to ease the situation. However, we found no case in which these individuals had tried Total Quality Management techniques to enhance their ability to innovate and generate creative solutions. Almost invariably people who do try are surprised and impressed because these techniques help them create ideas they would never have otherwise conceived. To highlight this point:

Employ TQM techniques to enhance creativity and innovation. Despite the skepticism many people have towards them, the techniques almost invariably help generate better ideas. And they are especially valuable and potent in times of budget crisis.

In sum, it is important to keep the fire of creativity and innovation blazing. Once innovation dies, then hope is snuffed out, pessimism seeps in, and decline is inevitable.

12. **Perspective**

Pessimism is both self-defeating and self-fulfilling. An antidote to pessimism is innovation. Innovation, by its nature, attracts funds, and even during times of budgetary cutback, those institutions that are innovative will likely fair better. Moreover, innovation is not a mystery nor a chance occurrence, and Total Quality Management techniques can help facilitate it.

Particularly during difficult times, it is natural to pull back and cut innovation. We believe that this is the wrong thing to do, that innovation should be undertaken, and, that the duration of the difficult times will depend in no small way on the quality and success of the innovation.